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JHB 7/10/42

MELLON INSTITUTE OF INDUSTRIAL RESEARCH

UNIVERSITY OF PITTSBURGH

SPECIAL REPORT

on

SUMMARY OF RANGE FINDING REPORT ON DIOXOLANECarbide and Carbon Chemicals Company Industrial Fellowship No. 274-6

The sample of dioxolane was procured from Fellowship 155 on 9-17-42 and was the usual commercial grade. This study was made so that information on its toxicity would be readily available.

Single Dose by Mouth

Single doses by mouth to male albino and piebald rats of a 10% dilution in water killed all of the rats receiving 10 gm./kg. Death occurred within 24 hours. During the first 4 hours the rats were narcosed. After 1.0 gm./kg. the rats were depressed and inactive for the first 4 hours, after which they recovered. The LD<sub>50</sub> is approximately 3.0 gm./kg. In those dying liver congestion and injection of the capillaries of the stomach and intestine were noted. Survivors appeared normal.

Single Dose by Skin Absorption

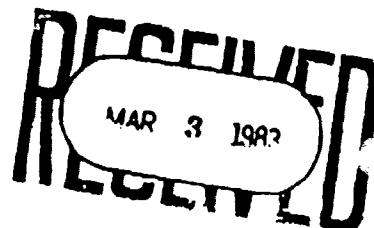
Application of the undiluted material to the intact skin of guinea pigs for 4 days resulted in slight necrosis of the skin. One rat of the 6 dosed, died at 10 gm./kg. The LD<sub>50</sub> is therefore >15.0 gm./kg.

Vapor Exposure

Because of the danger of explosion of the saturated vapors no such exposures were attempted in our equipment.

Local Action

Corneal necrosis of the rabbit eye was produced by 0.001 ml. of the undiluted material. Erythema was produced in 2 of the 5 rabbits receiving 0.01 ml. in the vesicant test.



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Summary

Single oral doses of dioxolane to male albino and piebald rats resulted in an LD<sub>50</sub> of 3.0 gm./kg. This places it in Grade 3 of our oral toxicity rating series along with diethyl "Carbitol," diethyl "Cellosolve" and dimethyl dioxane. The LD<sub>50</sub> by skin absorption for guinea pigs in the 4 day test is >15.0 gm./kg. Slight necrosis of the skin results. The undiluted material produced corneal necrosis of the rabbit eye in 0.001 ml. amounts, which relegates it to Grade 5. The undiluted material produced erythema on 2 of 5 rabbit bellies when tested in .01 ml. amounts. No saturated vapor exposures were made due to the danger of explosion.

Charles P. Carpenter-mg

Charles P. Carpenter  
INDUSTRIAL FELLOW

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## CERTIFICATE OF AUTHENTICITY

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